

2-1969

Selecting and Laundering 'Easy Care' Wrinkle-Free Fabrics

Mary S. Pickett
Iowa State University

Helen A. Kirk
Iowa State University

Follow this and additional works at: <https://lib.dr.iastate.edu/farmscience>



Part of the [Agriculture Commons](#)

Recommended Citation

Pickett, Mary S. and Kirk, Helen A. (1969) "Selecting and Laundering 'Easy Care' Wrinkle-Free Fabrics,"
Iowa Farm Science: Vol. 24 : No. 8 , Article 5.

Available at: <https://lib.dr.iastate.edu/farmscience/vol24/iss8/5>

This Article is brought to you for free and open access by the Extension and Experiment Station Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa Farm Science by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Selecting and Laundering "Easy Care," Wrinkle-free Fabrics

by Mary S. Pickett and Helen A. Kirk



CHLORINE BLEACH is recommended for laundering white polyester garments, but it can damage fabrics if used in concentrated form. The detergent you add to your wash acts as a buffer to protect fabrics from bleach. When adding bleach, use one of the procedures shown in the chart on page 16.

AN INCREASING number of new fabrics and finishes are on the market now. Sheets, tablecloths and other household linens, and clothing are coming out with permanent press and other finishes.

But finishes alone will not guarantee that a garment maintains an acceptable appearance. They merely give the fabric characteristics that lessen care requirements. This means easier care for you, but care that calls for special laundering know-how and equipment designed with specific features.

Research recently completed at Iowa State University shows that it's the laundry procedure, as well as the finish, that keeps white Dacron¹ polyester permanent press shirts white and wrinkle-free. The findings have implications for care of all permanent press polyester garments.

Twenty white shirts of Dacron polyester fiber, 12 with permanent press finishes and 8 with permanent press plus soil release finishes, were divided into 5 groups for the tests. After each period of wear, each group of shirts was laundered by one of 5 different methods. Later, shirts were judged on whiteness and wrinkling.

MARY S. PICKETT is professor of family environment; HELEN A. KIRK is a former graduate student.

¹ Dacron is the registered trademark of a polyester fiber produced by DuPont.

Five Laundry Methods Used

The first 4 laundry methods used the durable press cycle on an automatic washer (gentle agitation and slow spin speed) with the water at 120 degrees Fahrenheit and 1 cup of detergent. The procedure varied as follows:

Method 1 — permanent press finish shirts, *1 cup of bleach*, total durable press cycle time of 21 minutes.²

Method 2 — permanent press finish shirts, $\frac{1}{2}$ cup of bleach, total durable press cycle time of 21 minutes.

Method 3 — permanent press finish shirts, *no bleach*, total durable press cycle time of 19 minutes.

Method 4 — permanent press and soil release finish shirts, *no bleach*, total durable press cycle time of 19 minutes.

Method 5 was used on the permanent press and soil release finishes. The shirts were handwashed in 105-degree water with the same proportion of detergent as used in the automatic washer. Agitation and rinse times were the same as those in the durable press cycle on the automatic washer used in the study.

All the shirts laundered in automatic washers were dried in automatic dryers on the durable press cycle (8-minute heat phase and 10-minute cool phase). Shirts laundered by Method 5 were drip-dried.

The shirts were judged after 25 weeks for whiteness by mechanical means and by a 96-member consumer panel of 24 professional men and their wives and 24 non-professional men and their wives. The panel also judged the wrinkling of the shirts.

The consumer panel decided that the shirts laundered with $\frac{1}{2}$ cup of liquid chlorine bleach were as acceptable in appearance — if not more so — than those laundered with a full cup of bleach. This



AN AGITATED pre-soak or pre-wash cycle is usually effective for pretreatment of oily soil on polyester garments. For tougher stains like those on shirt collars, carefully apply liquid detergent or a detergent paste with a sponge.

is an important economy factor, since using less bleach per load will save you money.

Many homemakers are surprised that chlorine bleach is recommended for white polyester, but it is a very bleachable fabric. The DuPont Company, manufacturers of the Dacron polyester fiber, recommend chlorine bleach for laundering white articles of Dacron if the trim and other components of these articles are also bleachable with chlorine.

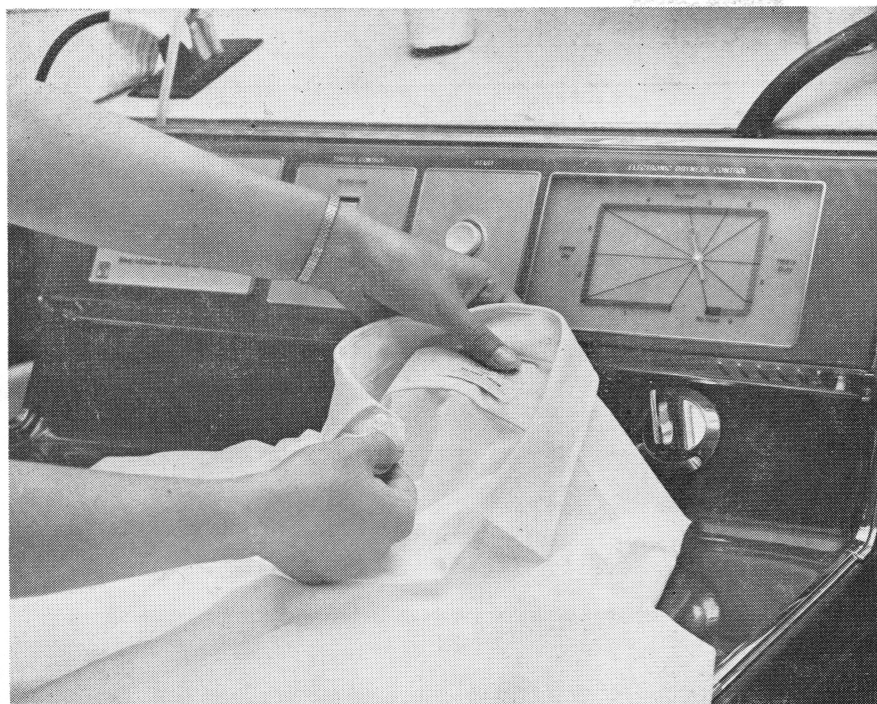
However, when you use chlorine bleach, be sure to use it properly. It is highly reactive and in concentrated form should not come in direct contact with fabrics. The detergent foam in the washer acts as a buffer to protect the fabric from the concentrated bleach (see Chart 1).

For the best appearance of easy-care fabrics, manufacturers recommend automatic home washing followed by machine tumble drying. The shirts that were handwashed and line-dried in this study were judged least acceptable.

When you buy new laundry equipment, buy appliances with the necessary features for the care of modern fabrics and finishes. Be sure to select washers and dryers with permanent press or durable press cycles. Two important features make these cycles more effective in achieving the wrinkle-free appearance of easy-care fabrics than the regular wash cycle in automatic washers.

First, the slow agitation and slow spin speeds used help minimize wrinkling and abrasion. Second, the heat and cool phases of

² See Chart 1 for proper procedure for adding bleach. In this study, the second procedure in Chart 1 for adding bleach was used. The shirts, water and detergent were agitated for 2 minutes to completely dissolve the detergent, bleach diluted in two quarts of water was added, and the shirts were agitated for two minutes more. This accounts for the two minute difference in wash time for methods using bleach and not using bleach.



THE SAME easy care, wrinkle-free characteristics that make laundering easier for the homemaker may cause special laundering problems. If a shirt is worn for a considerably longer period because it maintains a wrinkle-free appearance, the resulting ground-in dirt is hard to remove.

these cycles are designed to use the heat-sensitive characteristics of the polyester fiber to advantage.

The temperature of the hot water relaxes and smoothes heat-sensitive fibers such as polyesters. Then the temperature of the water is gradually cooled in the agitation period in what the equipment manufacturers call a step-down or cool down process. The cool phase sets the smoothness of the fibers. The cool down process protects the fabric from the spin which could result in deep wrinkles.

The heat and cool phases are important in the dryer also. The same smoothing effect happens here as in the washer, with the heat phase relaxing and smoothing the fibers and the cool phase setting the smoothness. (In line-drying you don't get this important smoothing action, so any wrinkles left in the clothes after spinning in the washer will remain.) To maintain the smoothness achieved with an automatic dryer, it's important to remove clothes as soon as the cycle is completed and immediately hang them on hangers.

Another important feature on your washer is a pre-wash or pre-

soak cycle. Oily soil needs pre-treating to loosen it, but it often isn't practical to treat each stain individually, especially if you have a large wash. An agitated soak period before the regular wash cycle is particularly effective with colored permanent press garments where hot water and bleach may cause fading and color changes.

If your present washer doesn't have a pre-soak or pre-wash cycle, you can still pre-treat your clothes by operating such a cycle yourself. Put your clothes in the washer, add detergent and let the tub fill with water and agitate for a few minutes. Then shut off the washer and soak the clothes for 5 to 10 minutes. Advance the dial to a low spin speed to remove the water and suds. You're now ready to wash your clothes as usual — but with pre-treated clothes.

When you do have stains that you feel will not be removed in an agitated pre-soak, use care and apply liquid detergent (or powdered detergent made into a paste) with a sponge. Researchers in the family environment department at Iowa State have found that you should not use a brush for spot

removal because the abrasion will harm fabrics.

Wear Pattern Influences Care

Besides methods and equipment used in laundering, the appearance of a garment is affected by where it's worn, how long it's worn and who wears it. These factors are called wear patterns and were examined in this study to see how they affect soiling.

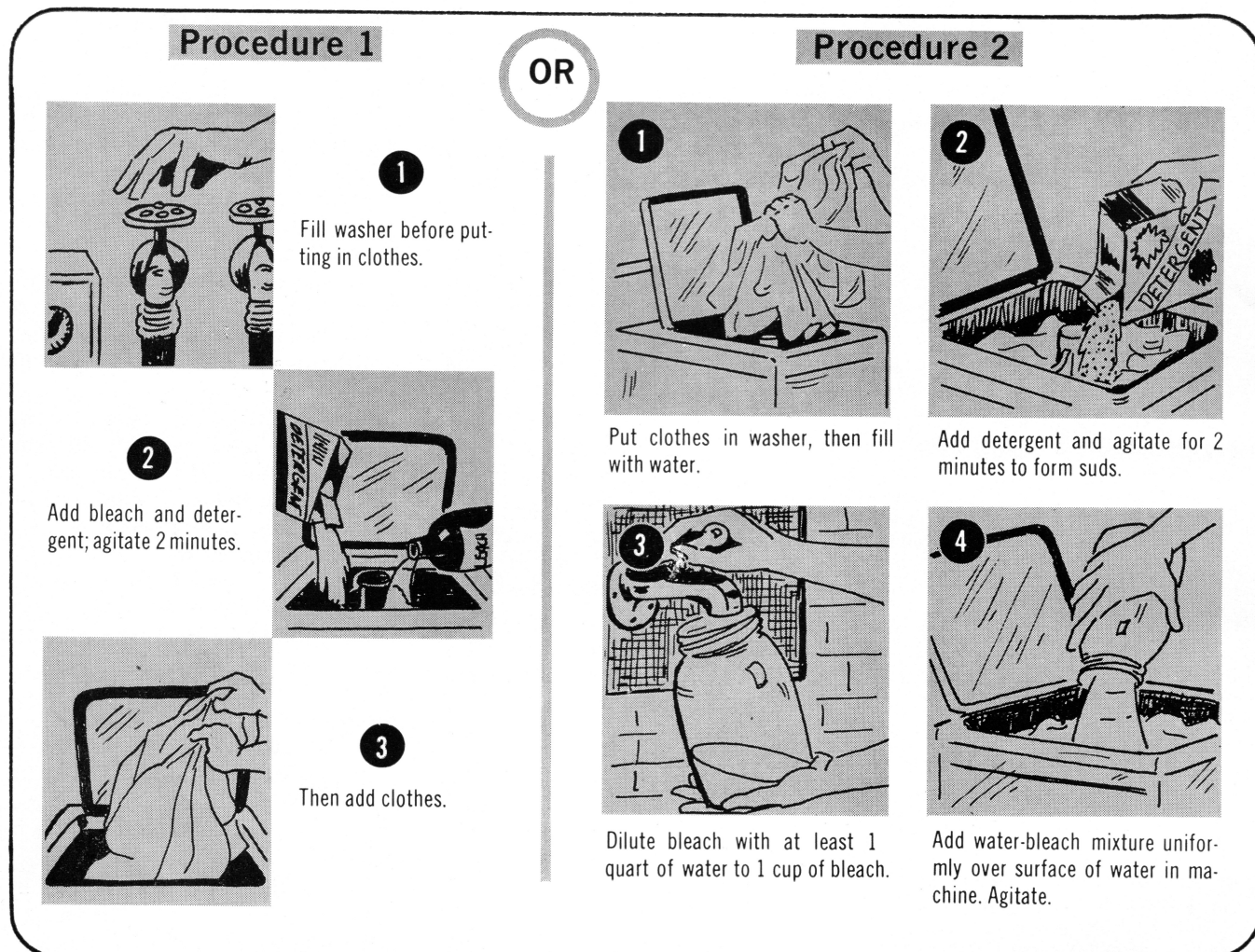
Values often determine wear patterns. A man will usually wear a shirt as long as it maintains the appearance he thinks it should, with some factors more important to some men than others. Men questioned in this study said that lack of wrinkling was more important to them than the whiteness of a shirt. This can create problems for the homemaker. If a shirt maintains a wrinkle-free appearance, it is likely to be worn for a longer period of time, resulting in more ground-in dirt. Dacron polyester soils easily and rapidly. For maximum whiteness the shirt should be worn for the shortest period of time that is reasonable in a man's work pattern, usually one day, and then laundered as soon as possible.

Soiling differs with occupation, body chemistry and geographical area, so your choice of laundry method is determined by these factors also. Experiment to find the methods that work best on the particular soiling problem you have. The Dacron polyester shirts used in this study were worn by men who worked in offices and classrooms. This soiling would differ from that of the same shirts worn by men who work outside and usually wear white polyester shirts for occasions other than work.

Individual body chemistry affects soiling. If perspiration odor and stains are a problem for you, try using a laundry aid designed to remove odor from fabrics.

Soiling differs geographically. For example, homemakers in an area with hot, dry summers have different laundry problems than those in an area with hot, humid summers. A shirt worn on city streets would also soil differently than the same shirt worn in a small town or in the country. You need to consider these differences when selecting laundry methods

CHART 1. Proper use of chlorine bleach to avoid direct contact with fabrics.



Adapted from Bulletin D-201 March 1967, E. I. duPont de Nemours & Company.

and equipment and when buying clothes.

Factors in Buying Shirts

Keep characteristics of the fibers and fabrics, laundry methods and equipment needed to care for these fabrics and the wear patterns of each member of your family in mind when selecting shirts. For example, a Dacron polyester shirt should not be chosen for wear when doing physical work or participating in sports, because it soils so rapidly. These shirts are more suitable for work in an office setting, or for church and other special occasions.

Dacron polyester should not be selected for wear in extremely warm temperatures, because the fibers are close together and don't allow moisture to escape. The men wearing the shirts for the study

indicated that Dacron polyester was less comfortable on warm days.

Another factor to keep in mind is finishes. Each process added to the shirt increases its price. In this study the soil release finish made little difference in the whiteness. Try experimenting yourself. For example, you could buy some napkins with a soil release finish and some without, and wash them by the same method to see if there is any difference in performance. Finishes can make your laundering easier, but in some cases you pay extra for a finish that simply doesn't make that much difference.

The 96-member panel indicated comfort, general appearance and quality were the 3 most important characteristics that influence the selection of a shirt. You and your family may disagree and

rank other characteristics such as care, cost, style, brand or occasion as more important. You need to decide what factors are most important to you and then select shirts and other garments that were designed with these factors in mind.

So there are two basic things to remember, if you want to get maximum performance from modern fabrics. First, select fabrics and finishes made to fit your particular needs. Consider the kind of care the garment needs, what season it is most comfortable in, how it soils and for what occasion it will be worn. Second, find out what special care your garments need because of the type of fabric or the finishes applied to the fabric. The laundry care you give garments is as important in maintaining their appearance as the selection characteristics.